

CLAIMS

1. A core/shell type polyamine dendrimer compound comprising core regions formed of a dendrimer compound (I) and shell regions formed by the reaction of said dendrimer compound (I) with an amine compound (A).

2. A compound according to claim 1, wherein said dendrimer compound (I) is a product obtained by causing a dendrimer compound (i) with an active hydrogen to react with a modifying agent for amine reacting terminal functional group (B) with a functional group capable of reacting with the active hydrogen of said dendrimer compound (i) and a separate functional group capable of reacting with the amine compound (A) thereby modifying part and/the whole of the active hydrogen of said dendrimer compound (i).

3. A compound according to claim 1 or claim 2, wherein said amine compound (A) is an alkylene imine or a polyalkylene imine.

4. A compound according to claim 2 or claim 3, wherein said modifying agent (B) is a member selected from the group consisting of epichlorohydrin, allyl glycidyl ether, 2-chloroethyl isocyanate, acetic anhydride, and sodium hydride used in combination with allyl chloride or chloroacetic acid.

5. A compound according to any of claims 1 - 4, wherein the ratio, AV_n/AV_c is in the range of 0.8 - 1.0, AV_n (unit: mmol/g - solid, amount of amino group in mmols per g of solid) being determined by nonaqueous titration and AV_c being determined by colloidal titration.

6. A compound according to any of claims 1 - 5, wherein said dendrimer compound comprises a dendrimer structure formed of a centrally branched portion containing at least

one point of branches and straight-chain arm portions connected to the most end of branches and radially extended from the most end of branches to the terminals of molecule, and having at least three arms per molecule or a cross-linked
5 structure thereof.

7. A compound according to any of claims 1 - 6, wherein said dendrimer compound is obtained by sequentially or simultaneously adding a starting substance formed of a compound with at least one active hydrogen atom in one molecule,
10 a branching agent (C) capable of being modified by a reaction with one active hydrogen atom to a molecular form newly acquiring not less than two active hydrogen atoms, and a chain extending agent (D) capable of growing a molecular chain while retaining at least one active hydrogen atom at the terminal
15 thereof in consequence of continuous addition reaction with the active hydrogen atom.

8. A compound according to claim 7, wherein said branching agent (C) is glycidol.

9. A compound according to claim 7 or claim 8, wherein
20 said chain extending agent (D) is an alkylene oxide.

10. A method for producing a core/shell type polyamine dendrimer compound, which comprises forming core regions by using a dendrimer compound (I) and forming shell regions by causing an amine compound (A) to react with said dendrimer
25 compound (I).

11. A method according to claim 10, wherein said dendrimer compound (I) is a product obtained by causing a dendrimer compound (i) with an active hydrogen to react with a modifying agent for amine reacting terminal functional group
30 (B) with a functional group capable of reacting with the active hydrogen of said dendrimer compound (i) and a separate functional group capable of reacting with the amine compound

(A) thereby modifying part and/the whole of the active hydrogen of said dendrimer compound (i).